

REMARKS/ARGUMENTS

Reconsideration and withdrawal of the rejections of the application are respectfully requested in view of the amendments and remarks herewith. The present amendment is being made to facilitate prosecution of the application.

I. STATUS OF THE CLAIMS AND FORMAL MATTERS

Claims 1-4 are pending. Claim 1 is independent. Claim 2 is hereby amended.

Support for this amendment is provided throughout the Specification as originally filed, and specifically on page 11 in lines 21-22. No new matter has been introduced by this amendment.

Changes to the claims are not made for the purpose of patentability within the meaning of 35 U.S.C., §101, §102, §103, or §112. Rather, these changes are made simply for clarification and to round out the scope of protection to which Applicants are entitled.

II. REJECTIONS UNDER 35 U.S.C. §112

Claims 1-4 were rejected under 35 U.S.C. §112, first paragraph. The present amendment obviates the rejection.

Claim 3 was further rejected under 35 U.S.C. §112, second paragraph, for allegedly failing to particularly point out and distinctly claim the subject matter regarded as the invention. Applicants respectfully disagree that an exhaustion channel is in conflict with vacuum lines or conduits. The exhaustion channel stated in claim 3 cannot be equated to the lines or conduits stated in its parent claim despite that they may all be classified as passageways. A link or conduit refers to a lengthy passageway, like a "hose being flexibly and long enough so that it can remain attached regardless of whether the shuttle is in its start position or in its heating

position” as stated by U.S. Patent No. 5,453,000 to Lebensfeld (hereinafter, merely “Lebensfeld”). On the other hand, an exhaustion channel is an extremely short passageway so that the invention “is enabled to complete its vacuum exhausting very efficiently and in a very short period of time,” as stated in on page 11 in lines 21-22 of the Specification.

More specifically, M.P.E.P. §2142 states:

The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness. If, however, the examiner does produce a *prima facie* case, the burden of coming forward with evidence or arguments shifts to the applicant who may submit additional evidence of nonobviousness, such as comparative test data showing that the claimed invention possesses improved properties not expected by the prior art. (Emphasis added)

By using an exhaustion channel rather than a line or conduit in the invention, it is able to exhaust air more efficiently and in a shorter period of time than Lebensfeld. Accordingly, the invention makes an improvement on the injection molding apparatus, which is not present in the prior art.

Therefore, Applicants respectfully request that the rejections to claim 3 under 35 U.S.C. §112 be withdrawn.

III. REJECTIONS UNDER 35 U.S.C. §103(a)

Claims 1-4 were rejected under 35 U.S.C. §103 as allegedly unpatentable over U.S. Patent No. 4,997,026 to Ozeki (hereinafter, merely “Ozeki”) in view of Lebensfeld. Applicants respectfully disagree and assert that claims 1-4 are patentable for at least the following reasons : 1) the gas venting device of Ozeki is distinguished from the vacuum apparatus of the invention, 2) it is advantageous to place the vacuum system in close proximity to and circumferentially above the molding cavity, and 3) there is a lack of motivation to

combine Ozeki and Lebensfeld because i) they are different types of molding requiring different equipment and ii) they require different raw materials to perform their functions.

A. The gas venting device of Ozeki is distinguished from claim 1

As understood by Applicants, Ozeki discloses a gas venting device for molding operations. Although the Office Action states that the vacuum apparatus of the invention was the gas venting device (100) in Ozeki, Applicants respectfully disagree. The gas venting device of Ozeki has been interpreted as a vacuum apparatus; however this is not possible. Ozeki clearly states that the vacuum system is not shown: “air and/or gasses within the cavity 4 vent passage 12 chamber 13 and passages 14-14 are evacuated by means of the vacuum system **(not shown)**” (emphasis added). Furthermore, the gas venting device (100) does not contain a vacuum tank, rather it is simply a vent comprised of a piston assembly (112) to maintain the movement of a valve body (106). (See column 3, line 62 - column 4, line 25 and Figure 5 of Ozeki.)

Therefore, Applicants respectfully submit that Ozeki does not teach or suggest “a vacuum apparatus including a vacuum tank disposed within said die apparatus in close proximity to said cavity and circumferentially above said cavity, wherein air and/or fluid inside said cavity is exhausted directly by said vacuum apparatus without passing through any vacuum lines or conduits,” as recited in claim 1.

In addition to differentiating the gas venting device from the vacuum apparatus, Applicants also respectfully point out that, the vacuum apparatus is not located in close proximity to the cavity and circumferentially above the cavity of the molding apparatus.

Applicants respectfully submit that Ozeki does not teach or suggest a vacuum apparatus “within said die apparatus in close proximity to said cavity and circumferentially above said cavity,” as recited in claim 1. In Ozeki, the gas venting device (100) is above the

cavity of the molding apparatus, not the vacuum system which is presumably connected to the exterior of the molding apparatus by the exhaust port (110), where evacuation of the air occurs.

B. Advantage of vacuum tank placement of claim 1

The Office Action states that Lebensfeld calls for the vacuum tank to be within the housing of the die apparatus. Although the vacuum pump (60) is located in the interior of the apparatus, Applicants respectfully disagree that it can be construed as being in close proximity with the cavity. Furthermore, the Office Action states that in regards to circumferentially above the cavity, the tank of Lebensfeld has equivalent function whether it is located adjacent or circumferentially above the cavity. Applicants respectfully disagree, and submit that the tank does not have equivalent function because it is *advantageous to place the vacuum system both in close proximity to and circumferentially above the molding cavity*. The reasoning for the benefits of the tank placement has been explained in the previous discussion on pages 5-6 of the remarks herein. By locating the vacuum apparatus both in close proximity to and circumferentially above the cavity of the molding apparatus, it has the ability to facilitate exhaustion in a shorter period of time.

C. Lack of motivation to combine Ozeki and Lebensfeld

The Office Action states that it would have been obvious to modify Ozeki with the tank as taught by Lebensfeld because it allows for portability of the entire apparatus in a single housing. This issue was first raised in the Final Office Action dated February 18, 2004 where the reference was to U.S. Patent No. 5,603,879 to Osada (hereinafter, merely "Osada") rather than to Ozeki.

Applicants submit that Lebensfeld, since it is a child's toy, provides portability as the molding apparatus is not large or heavy. Ozeki discloses a commercial die apparatus significantly heavier and bulkier than the toy of Lebensfeld. Thus there is no motivation or suggestion either in Lebensfeld or Ozeki to make the modification suggested by in the Office Action.

The Advisory Action dated May 26, 2004 replied by stating that "Lebensfeld, while a 'child's toy' is still a molding apparatus and thus one skilled in the art recognized the molding technology utilized in that apparatus and be able to combine it with Osada." However, Applicants respectfully disagree with the Office Action because there is a lack of motivation to combine the two references.

As understood by Applicants, Lebensfeld is a toy vacuum molding apparatus which heats a thin sheet of plastic until it is suitably softened so articles are formed when a vacuum is applied to the mold, while Ozeki is a gas venting device for molding operations which includes a valve for closing off a gas evacuation system from a mold when the mold cavity is filled with melt. There are several significant reasons why there is no motivation to combine the reference teachings: i) the types of molding the apparatuses perform and the consequences of those types and ii) the raw materials and their respective phase states for each apparatus.

More specifically, M.P.E.P. §2145.01 states:

There must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify or combine reference teachings. The Federal Circuit has produced a number of decisions overturning obviousness rejections due to a lack of suggestion in the prior art of the desirability of combining references. (Emphasis added)

Neither Ozeki itself nor one of ordinary skill in the art of industrial injection molding would point to Lebensfeld's toy meant to serve "amusement type benefits" (column 1, line 18 of Lebensfeld) to modify the gas venting device (100) of Ozeki.

1. Ozeki and Lebensfeld perform two different types of molding on different apparatuses

To begin with Ozeki refers to a gas venting device for an industrial injection molding apparatus while Lebensfeld deals with a child's toy for shaping plastic. Presumably, it would take a trained adult following strict safety procedures to operate Ozeki. The gas venting device (100) would be in a factory setting because injection molding machines are typically extremely large (several yards and hundreds to thousands of tons), as one of ordinary skill in the art would know.

On the other hand, Lebensfeld's toy is specifically designed to be "operated by children" so "numerous, redundant and failsafe features, have been developed to prevent or greatly reduce the possibility of accidents" (See column 1, line 63-66 of Lebensfeld). This toy is presumably to be used in a private setting, such as a home, and to be **significantly** smaller in relative size to an injection molding apparatus. Since the toy is enclosed in a single housing to provide for portability, it can be presumed that a parent might take the toy out for a child to play with and then put it away, meaning that the toy be relatively small in size compared to an injection molding apparatus.

2. Ozeki and Lebensfeld use different types of raw materials

Due to Ozeki and Lebensfeld being different types of apparatuses, they require vastly different raw materials and for the raw materials to be in different phase states. As one of ordinary skill in the art would be aware of, Ozeki's device is for a molding apparatus which uses

resin in the shape of pellets, where the raw material is typically a nylon, polycarbonate or polypropylene. In addition, injection molding also requires the plastic material to exhibit **fluidity**, meaning the plastic is to be completely melted into a viscous liquid form, so that it can be injected into the cavity to take the shape of the mold.

Alternatively, Lebensfeld's toy apparatus uses a "thin sheet of plastic such as colored styrene or metalized poly-vinylchloride" (See column 1, lines 8-9 of Lebensfeld) Here, the vacuum formed articles are made from plastic sheets that are "suitably softened" so that they can "conform to the mold's shape" (See column 1, lines 11-13 of Lebensfeld). The sheets exhibit **plasticity** rather than fluidity, meaning they are in a malleable yet solid state, to be dynamically drawn into the mold's shape (the process also being known as dynamic). This is unlike the molding apparatus of Ozeki, which molding must use plastic that is completely melted into a liquid (the process also being known as static molding).

Therefore, while Ozeki uses an industrial, static molding process and Lebensfeld (a toy) uses a dynamic molding process, the two disclosures have significantly different functions and structures which suggest a lack of motivation to combine the reference teachings.

More specifically, M.P.E.P. §2142 states:

To reach a proper determination under 35 U.S.C. 103, the examiner must step backward in time and into the shoes worn by the hypothetical "person of ordinary skill in the art" when the invention was unknown and just before it was made. **In view of all factual information, the examiner must then make a determination whether the claimed invention "as a whole" would have been obvious at that time to that person.** Knowledge of applicant's disclosure must be put aside in reaching this determination, yet kept in mind in order to determine the "differences," conduct the search and evaluate the "subject matter as a whole" of the invention. **The tendency to resort to "hindsight" based upon applicant's disclosure is often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art.** (Emphasis added)

Although a hindsight point of view is necessary to develop an understanding of the applicants' invention, it may take "into account only knowledge which was within the level of ordinary skill in the art at the time the claimed invention was made," as stated in the M.P.E.P. §2145. By analyzing the differences between Lebensfeld and Ozeki, it is apparent that one of ordinary skill in the art of injection molding machines disclosed in Ozeki would not be motivated to combine Lebensfeld's toy molding apparatus with Ozeki.

D. Summary

Applicants submit that the gas venting device of Ozeki is not equivalent to the vacuum apparatus of the invention.

Applicants also submit that it is advantageous to place the vacuum system in close proximity to and circumferentially above the molding cavity.

In addition, Applicants submit that there is a lack of motivation to combine Ozeki and Lebensfeld for several reasons. Ozeki and Lebensfeld are different types of molding requiring different equipment and Ozeki and Lebensfeld also require different raw materials to perform their functions.

Therefore, for all the reasons stated above, Applicants respectfully submit that Claim 1 is patentable.

IV. DEPENDENT CLAIMS

The other claims in this application are each dependent from one of the independent claims discussed above and are therefore patentable for at least the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention,

however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

CONCLUSION

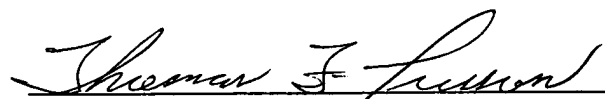
In the event the Examiner disagrees with any of statements appearing above with respect to the disclosure in the cited references, it is respectfully requested that the Examiner specifically indicate those portions of the references providing the basis for a contrary view.

Please charge any additional fees that may be needed, and credit any overpayment, to our Deposit Account No. 50-0320.

Applicants respectfully submit that all of the claims are in condition for allowance and request early passage to issue of the present application.

Respectfully submitted,
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